

CLAIMS:

1. Elastic drainage pavement for use on existing pavement comprising a primer layer which is provided on the existing pavement and comprises 10-20 % by weight of PPG, 5-10 % by weight of TMP, 5-10 % by weight of 1,3-BG, 15-25 % by weight of TDI, 49-64.9 % by weight of a solvent (xylene or methylethylketone) and 0.1-1.0 % by weight of an additive (defoaming agent); and an elastic drainage layer spread over the primer layer and prepared by mixing waste-polyurethane chips and a binder in the weight ratio of 3:1 to 4:1, the waste-polyurethane chips having the size of 1 to 5 mm, and the binder comprising 50-70 % by weight of PPG, 5-10 % by weight of PBG, 3-5 % by weight of 1,3-BG, 20-30 % by weight of MDI and 2-5 % by weight of TDI.

2. Elastic drainage pavement as claimed in claim 1, wherein the waste polyurethane chips are obtained by collecting waste-polyurethane scraps from soles of shoes, parts of toys, parts of refrigerators and vehicles, decrepit polyurethane resilient pavement, etc. and separating the scraps according to their colors; removing impurities attached on the scraps; pulverizing the waste-polyurethane scraps into a predetermined size; mixing the scraps with 0.3-1.0kg of stearic acid, 20-30kg of heavy calcium carbonate, 0.1-2.0kg of titanium dioxide and 5kg or less of a pigment or 20-40kg of a photoluminescent pigment, based on 100kg of the pulverized waste-polyurethane scraps by stirring; heating and extruding the mixture in the form of a plate; and then condensing and cutting the extruded mixture in the size of 1 to 5 mm.

3. Elastic drainage pavement as claimed in claim 2, wherein a flame retardant is added to the mixture in the range of 1-2% by weight of the scraps in preparing the waste-polyurethane chips.

5 4. Elastic drainage pavement as claimed in claim 2, wherein depending on usages of the elastic pavement, a foaming agent is used to adjust the hardness of the waste-polyurethane chips.

 5. Elastic drainage pavement as claimed in claim 3, wherein
10 depending on usages of the elastic pavement, a foaming agent is used to adjust the hardness of the waste-polyurethane chips.

 6. Elastic drainage pavement as claimed in claim 2, wherein
the waste-polyurethane chips are cut in the shape of a strand having the length of
15 10-30mm and the thickness of 1-3mm to be used in part with the waste-polyurethane chips having the size of 1 to 5 mm.

 7. Elastic drainage pavement as claimed in claim 3, wherein
the waste-polyurethane chips are cut in the shape of a strand having the length of
20 10-30mm and the thickness of 1-3mm to be used in part with the waste-polyurethane chips having the size of 1 to 5 mm.

 8. Elastic drainage pavement as claimed in claim 1, wherein
the waste-polyurethane chips can be replaced in part with new polyurethane chips.

9. Elastic drainage pavement as claimed in claim 2, wherein
the waste-polyurethane chips can be replaced in part with new polyurethane chips.

10. Elastic drainage pavement as claimed in claim 8, wherein the new
5 polyurethane chips are prepared by mixing 1 part by weight of liquid polyurethane with
0.5-1.2 parts by weight of heavy calcium carbonate, and 0.01 part by weight or less of a
pigment or 0.1-0.4 parts by weight of a photoluminescent pigment; pouring the mixture
in a mold and curing in a sheet form; and then pulverizing the polyurethane sheet into
the particle size of 1-5mm.

10

11. Elastic drainage pavement as claimed in claim 9, wherein the new
polyurethane chips are prepared by mixing 1 part by weight of liquid polyurethane with
0.5-1.2 parts by weight of heavy calcium carbonate, and 0.01 part by weight or less of a
pigment or 0.1-0.4 parts by weight of a photoluminescent pigment; pouring the mixture
15 in a mold and curing in a sheet form; and then pulverizing the polyurethane sheet into
the particle size of 1-5mm.

12. A method of paving elastic drainage pavement on existing pavement comprising the steps of:

cleaning the existing pavement;

paving the existing pavement with a primer layer and then an elastic
5 drainage layer,

wherein the primer layer comprises 10-20 % by weight of PPG, 5-10 % by weight of TMP, 5-10 % by weight of 1,3-BG, 15-25 % by weight of TDI, 49-64.9 % by weight of a solvent (xylene or methylethylketone) and 0.1-1.0 % by weight of an additive (defoaming agent), and the elastic drainage layer is prepared by mixing
10 waste-polyurethane chips and a binder in the weight ratio of 3:1 to 4:1 and pouring the mixture onto the primer layer in situ, the waste-polyurethane chips having the size of 1 to 5 mm and the binder comprising 50-70 % by weight of PPG, 5-10 % by weight of PBG, 3-5 % by weight of 1,3-BG, 20-30 % by weight of MDI and 2-5 % by weight of TDI;

15 pressing with a roller of 20-30 kg heated to temperatures of 50-80°C and trowelling the elastic drainage layer in the same temperature; and then curing for about 5 to 24 hours.

13. A method of paving elastic drainage pavement as claimed in claim 12,
20 wherein the waste-polyurethane chips are obtained by collecting waste-polyurethane scraps from soles of shoes, parts of toys, parts of refrigerators and vehicles, decrepit polyurethane resilient pavement, etc. and separating the scraps according to their colors; removing impurities attached on the scraps; pulverizing the waste-polyurethane scraps into a predetermined size; mixing the scraps with 0.3-1.0kg of stearic acid, 20-30kg of

heavy calcium carbonate, 0.1-2.0kg of titanium dioxide and 5kg or less of a pigment or 20-40kg of a photoluminescent pigment, based on 100kg of the pulverized waste-polyurethane scraps by stirring; heating and extruding the mixture in the form of a plate; and then condensing and cutting the extruded mixture in the size of 1 to 5 mm.

5

14. A method of paving elastic drainage pavement as claimed in claim 13, wherein the waste-polyurethane chips made by using the pigment and the waste-polyurethane chips made by using the photoluminescent pigment are separately prepared and respectively mixed with the binder, so that they can be separately distributed and spread in their predetermined positions.

10

15. A method of paving elastic drainage pavement as claimed in claim 12, wherein the waste-polyurethane chips can be replaced in part with new polyurethane chips.

15

16. A method of paving elastic drainage pavement as claimed in claim 13, wherein the waste-polyurethane chips can be replaced in part with new polyurethane chips.

20

17. A method of paving elastic drainage pavement as claimed in claim 15, wherein the new polyurethane chips are prepared by mixing 1 part by weight of liquid polyurethane with 0.5-1.2 parts by weight of heavy calcium carbonate, and 0.01 part by weight or less of a pigment or 0.1-0.4 parts by weight of a photoluminescent pigment; pouring the mixture in a mold and curing in a sheet form; and then pulverizing the

polyurethane sheet into the particle size of 1-5mm.

18. A method of paving elastic drainage pavement as claimed in claim 16,
wherein the new polyurethane chips are prepared by mixing 1 part by weight of liquid
5 polyurethane with 0.5-1.2 parts by weight of heavy calcium carbonate, and 0.01 part by
weight or less of a pigment or 0.1-0.4 parts by weight of a photoluminescent pigment;
pouring the mixture in a mold and curing in a sheet form; and then pulverizing the
polyurethane sheet into the particle size of 1-5mm.